INDIGENOUS DIETARY PATTERNS AND POSTPARTUM OBESITY: EXAMPLES FROM SELECTED IGBO COMMUNITIES.

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Abstract
This study builds on the rising global concern of the obesity epidemic in the last two decades. Previous studies record increased comorbidity and the influence of obesity on human health and social well-being. World Health Organization (WHO), for instance, acknowledges that obesity affects all ages, genders, and all populations. Regardless, more studies have remarked predominant obesity among women of reproductive age, so why? Again, studies have explored the postpartum practices among the Igbos; however, there is a gap in understanding why the new moms from Igboland choose what they consume during omugwo. Therefore, there is a need to view the contributions of food patterns to postpartum obesity and understand the dynamics of Indigenous Postpartum Diet (IPD) choices to culture preservation. The research employs a quantitative approach to explore how IPDs influence the prevalence of obesity. However, the paper's results show that women are expected to follow a long-lasting dietary pattern, irrespective of their body absorbance, Body Mass Index (BMI), and health. In addition, cultural expectations and socio-economic status influence how Igbo women relate to food. Hopefully, this study will reinforce the synergy between social norms, cultural consciousness, and identity preservation.
Keywords: Postpartum, obesity, indigenous, diet, omugwo, Igbo, communities.

Introduction
It is proven that obesity epidemics are associated with an increased rate of physiological and psychological health risks (Sljivic & Gusenoff, (2019) and Ko, Rockhill, Tong, Morrow, & Farr, (2017)). During the COVID pandemic, for instance, scholars in the health sciences posited that obesity has emerged as a high-risk factor for increased death rate (Popkin, Du, Green, Beck, Algaith, Herbst, Alsukait, Alluhidan, Alazemi, & Shekar, 2021). Obesity is a potential factor in cardiovascular diseases, as remarked by the American Heart Association (Powell-Wiley, Poirier, Burke, Després, Gordon-Larsen, Lavie, Lear, Ndumele, Neeland & Sanders, 2021). This explains how obesity has become of concern in the health sector. The World Health Organization (WHO, 2015) has also stated that obesity affects all genders (Iqbal, Nasrullah, Igbokwe & Ahurumaraeze, 2019), ages and all populations.

Conversely, some studies have shown that it predominates among women. For instance, Ogunwole (2021) observed that women of reproductive age face the challenges of obesity more. Faria-Schützer, Surita, Rodrigues, and

Turato (2018) acknowledged that most women do not regain their original Body Mass Index (BMI) after childbirth. This could result from food consumption and Low Energy Expenditure (LEE) directly impacting short- or long-term obesity. To this end, food is an important aspect of postpartum care due to its implication for obesity.

To support the above assertion, WHO (2015) explains that the period after childbirth is critical for both the mother and child or children in case of multiple births; thus, WHO specifies a period of 42 days for postnatal care. The postpartum period is precarious when a mom cares for a child and herself (Dennis, Fung, Grigoriadis, Robinson, Romanus & Ross, 2007). In some African societies, older women, friends, and extended family members come to care for the mom (Lawal, Lawal, Chidi-Nebo & Ogunmiyi, 2000). That means the new mom is not allowed to do any strenuous job, making more women susceptible to increased BMI during post-natal care and beyond. Weight gain is an essential expectation of this period; traditionally, every nursing mother is expected to gain weight (Kelly, 1967).

In Igboland of present-day Nigeria, the postpartum period is called "*Omugwo*" and an important feature during *omugwo* is the food given to the new mom as it is assumed to have implications on her health and survival (Demije-Ajayi, 2018). Postpartum diets can vary in nutritional value but are believed to be vital for a new mom and child. Some expectations of *omugwo* in Igboland are highlighted as follows:

- *Omugwo* is supposed to last for at least 28 days (*izu asaa*)
- It is a period to teach new moms how to care for themselves and their babies.
- It is a period to help new moms ease in into the role of being a mother.
- It is a period to explain the local traditions and cultural expectations to the new mother.
- The new mom must have compulsory hot water therapy and sitz bath to remove blood clots from the uterus.
- Some believe the more weight a woman gains during/after *omugwo*, the wealthier her family is.
- New moms must eat food containing yam and local spices.
- The food is not supposed to have lots of veggies.
- The new mom is supposed to eat something other than ice cubes and cold drinks.
- Careless feeding is believed to result in skin infection and diarrhoea (*nlacha* and *jedi jedi*) for the mother and baby.
- New moms should focus on recovery and not participate in house chores (modified from Demije-Ajayi, 2018).

Moreover, other scholars also contributed to the study of *omugwo* in Igboland. For instance, Ekwariri (2020) sees it as a rehabilitation period for the new mom. Traditionally, when couples expecting a baby do not have help, older women who live close to them volunteer to help. It is also a period when

a new mom is laid off from some house chores in her home (Umunna, 2012; Igbokwe & Ahurumaraeze, 2019). It is important to note that modernity and urbanisation have influenced the *omugwo* tradition. However, mothers travel far and wide to be with their expecting daughters. According to Chukwu and Ume (2020), any woman going for *omugwo* spends time buying local spices (see plate 1) such as Uda (*Xylopia aethiopica)*, Uziza (*Piper guineense)*, varieties of fish, and dried meat with which she travels to her daughter's home to make the proper meals.

Hot drinks (local tea made from herbs and leaves) and hot-spiced soups are believed to be good for blood circulation and breast milk production. It is important to note that yam is a significant part of IPD in most Igbo communities. In some cases, IPDs are yam in watery spiced porridge or pounded yam and *nsala* soup (see plate 2), *ogbono* soup (see plate 3) or *ofe-ogwu* (see plate 4). The first diet is peculiar to the Onitsha axis, located in the western part of Igboland, while the second diet is common to the Nsukka people of northern Igboland. The third, *ofe-ogwu* is more prevalent around the Owerri axis in the southern part of Igboland. However, IPDs are different in parts of Igboland, as displayed in the pictures below.



(1)



(2)

Plates 1-2: Some Soup Ingredients and IPD from Onitsha Axis (Nsala and Pounded Yam (*Nri Ji*).



(3)



(4)

Plates 3-4: PIPDs from Nsukka (*Ogbono* Soup and Pounded Yam) and Owerri (*Ofeogwu*)

From Owerri -southern Igboland, *Ajumbaise,* -a composite of herbs, seeds and leaves is believed to have detoxifying and slimming effect (see plate 4). In contrast, many new moms have keyed into adopting *ajumbaise* (native tea) as a major part of their postpartum diet. In some cases, consuming *ajumbaise* tea could stir the latent body weight, which was the goal for these mothers. Cultural expectations and social norms work hand in hand to influence food choices, especially during the postpartum period. Regardless, some beliefs about indigenous food patterns must be more accurate and could be harmful if not properly checked. A similar study confirmed that some Palestinian women's metabolism changes are sometimes influenced by indigenous diets after childbirth (Hammoudeh, Mataria, Wick, & Giacaman, 2009). Omugwo practice is a situation of cultural relativism (Nikerson, 2022), where the society constructs values and not necessarily because it is the right thing to do.

As mentioned above, studies have found women of reproductive age more susceptible to increased BMI; the underlying questions here are a). Why are women of reproductive age likely to increase their BMI? (b)Are choices of food consumption during the postpartum period factors that could have influenced the increase in BMI? If yes, (c) What is the possibility of these food choices in preserving cultural expectations and identity sustainability in Igboland? To achieve this, the research employs a quantitative approach which includes structured questionnaires to collect data on how IPDs influence the prevalence of obesity among new moms and its influence on the continuity of the Igbo culture.

Research Objectives

The following objectives guide the study:

a. To identify the various IPDs new moms eat in the selected Igbo communities.
b. To examine the impact of food choices on increased BMI during postpartum period.
c. To understand how new moms respond to cultural expectations surrounding postpartum diets in selected Igbo communities.

Materials and Methods

This study employs a quantitative method (Torres Colón, 2020), which was necessary to generate valid, reliable, and comparable participant data. The study used a literature review and a structured questionnaire to amass data. Also, peer-reviewed publications and newspapers were explored to understand concepts of obesity, indigenous diet, and *omugwo* in Igboland. The interview focused on 45 new moms after 0-10 months of their child delivery from three locations within Igboland - Owerri, Onitsha and Nsukka areas. Immunisation days at primary health clinics were targeted to employ respondents for this study.

Further on the data collection, the respondents' demographic information was also analysed to determine the influence of their response to fulfilling cultural expectations. The survey questionnaires were structured with 40 questions, 20 of which were answered using 3-Likert scale responses of "Yes, Not Sure, and No", which were translated to 1, 2 and 3, respectively, while the other 20 questions were "Why" to the previous individual questions. This structure enabled the collection of comparable data from the participants. Here, responses to indigenous food traditions in Igboland were reviewed to understand a). Their implications for postpartum obesity, b). What cultural expectations on IPD have been fulfilled and sustained?

Statistical Package for the Social Science (SPSS), was used to generate frequencies and simple percentages using cross-tabulation. The cross-tabulation analytical technique here was used to compare nominal variables from the questionnaire and responses to understand the research participants' various standpoints and arrive at conclusions for the study. The analysis helped evaluate the relationship between the socio-economic gaps and the implication for increased BMI between the study samples and their support for cultural expectations. Subsequently, statistical data was presented using tables, pictures, and map illustrations.

Collecting data from all Igbo communities would have been fascinating; however, the move to cover all Igbo communities was constrained by finances, time, and insecurity in Igboland. The time constraint was challenging as the initial sample size could not be reached; it was streamlined to just 45 women from 3 known locations in Igboland. Finally, the insecurity menace in southeastern Nigeria militated against the research progress, especially in the interiors of Igbo villages.

Study Area

Igbo ethnic group made the 3rd most populated group in Nigeria with up to 18% after Hausa-Fulani and Yoruba (Oriji, 2011). Igbo-speaking people occupy the southeastern states of Nigeria, West Africa. The Igbo states include Abia, Anambra, Enugu, Ebonyi and Imo; some indigenous Igbos live in some parts of Delta, Rivers, and Cross River states. The contact between the Igbos and those neighbouring states resulted from intermarriages, trade, and border conflicts (Oriji, 2011). The population of the Igbos from the 2006 National Population Commission's (NPC) population census is around 16 million. The land mass occupied by the Igbos is approximately 41,000 km^2, majority of the expanse of land was initially for farming. The study area was streamlined into three areas: Onitsha urban, Nsukka urban and Owerri municipal zones. Onitsha is located in western Igboland, while Nsukka and Owerri are located in northern and southern Igboland.

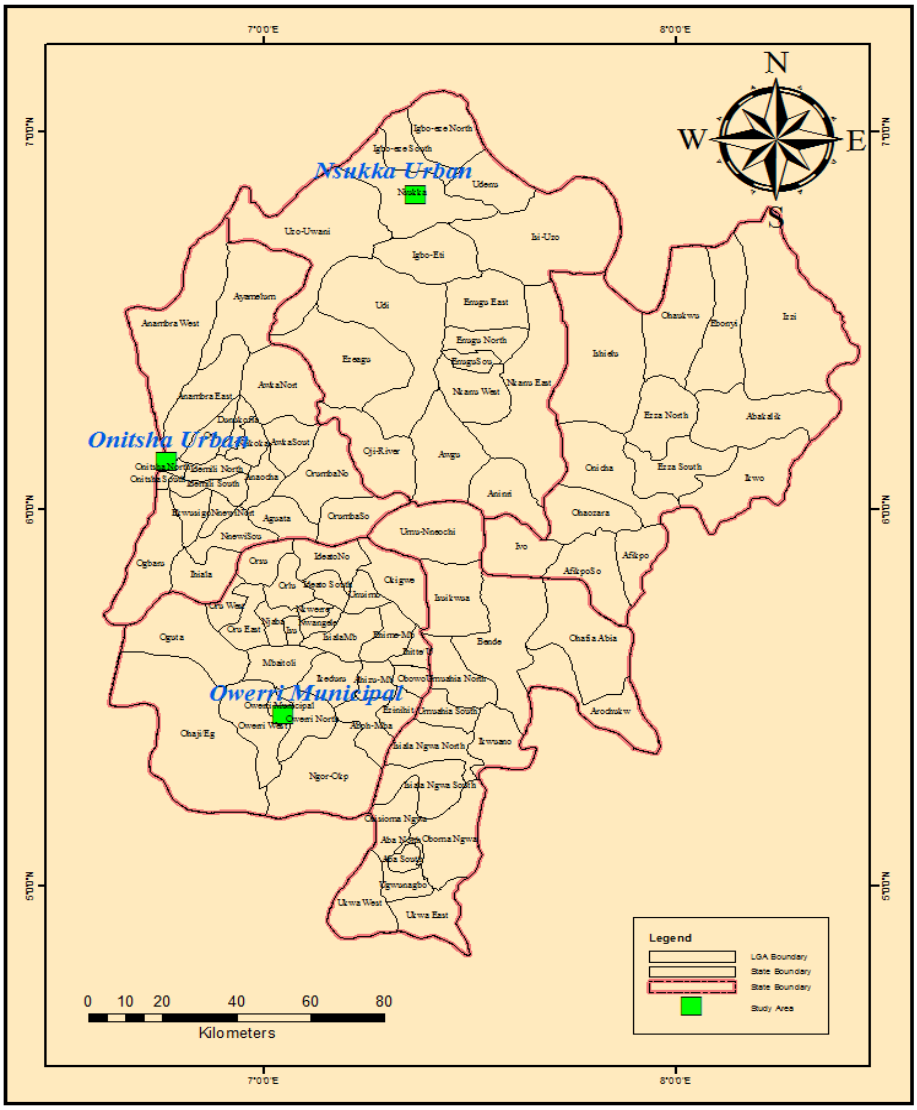


Figure 1: Map of Igboland, Showing Study Locations.
Source: Adapted and Modified from Diva GIS Nigeria Shapefile (2023).

Regarding the Igbos' socio-economic activities, the fertile land characterised by a rich network of drainage systems and tributaries enhances farm productivity. These tributaries run from the coast through the hinterland, including Niger, Omambala, Imo, and cross river. Alluvia from these tributaries flows through erosion and floods into the farmland, especially toward southern Igboland. This has encouraged more engagement in farming and sales of farm produce by the locals in the community markets. The markets are initially a four-day market – *Eke*, *Orie*, *Afo*, and *Nkwo*. The four market days here represent the traditional days of the week (*out-izu*). While

four days make up an Igbo week, seven weeks make up a month -the native people would call it *izu-asaa*. Farm produce is mainly vegetables, nuts, spices, herbs, fruits, tubers (yam, cassava, cocoyam, potatoes), and other residual crops. Present-day Igboland is transitioning into an industrialised and modern business zone against agrarian communities. A significant implication is that core traditions and indigenous practices are eroding and getting modified by the day.

Findings

IPD Choices

The survey highlights that the participants had various dietary choices throughout their postpartum period; however, most respondents depended on IPD during omugwo. The responses for questions 301 to 400 are good indicators that buttress the interplay between IPD, obesity, and preservation of culture. In line with cultural norms, many participants adequately followed the hot water therapy (μ response of 1.13>1). This is contrary to the consumption of cold drinks (μ 2.67) and ice cubes (μ 2.17), where just a few (2) participants maintained the use of cold drinks and ice cubes. The consumption of hot-local teas, hot-spiced soups and yam were more prevalent and symbolic components of the IPD; thus, many responded that they had them incorporated into their daily meal. Craving for other food was inevitable; however, the new moms restricted themselves because they needed to adhere to social norms, while a few participants consumed varieties of homemade food (non-IPDs).

Another striking issue was that veggies and fruits were perpetually avoided and had low positive responses. Veggies and fruits are abundant in the population locations; therefore, it is not an issue of availability. The survey inquired about fruit or vegetable allergies to understand why they avoided fruits and veggies. The result (μ 2.31) indicates that many were unsure if fruits and veggies were good for them. Furthermore, allergies to local spices got a low and negative response (μ 2.64). Most participants do not have allergies to local spices, except for a few (SD = .645) who continued the IPD after their knowledge of allergies to hot spices. Some respondents mentioned that even though they were advised to eat varieties of vegetables, many new moms still stuck to IPDs.

Again, from the data collected, new moms do not necessarily like eating IPD daily; question 337 (μ 1.78) revealed that the majority answered, "not sure". They eat IPD because they are expected to do that after childbirth, believing it is efficient for its purpose. Lastly, the use of dieticians' directives is new but an essential part. The response (μ 2.71) reveals that most participants do not see the need to follow dieticians' directives. However, one of the participants who answered 'yes' added, "I followed the dietician's directive and it worked for me, as I am weight-gain and health conscious. The dietician's directives offered options from local food compliant to blood

group, health, and weight of mother and child" (BMO, personal communication, Nov. 2022).

Increased BMI

It is noted from the survey that the majority of those new moms on indigenous diets increased their BMI as many even anticipated it, believing it is a factor in explaining their well-being and their husband's wealth. In solidarity, a respondent said, "*I prefer to add some weight first during omugwo and work on my weight afterwards; I cannot afford to be people's laughingstock*" (IJ, Per. Comm., Nov. 2022). Table 1 outlined the interplay between the participants' compliance and increased BMI; judging from who ate what and who gained weight, there is a high count of participants on strict compliance to IPD. Overall, most participants (57.8%) who maintained compliance became overweight. While 40.0% of the participants retained a normal BMI, only 2.2% jumped two weight gain categories (moving from normal to obesity). The BMI was calculated using the WHO model (body weight (kg)/Height (m^2) = BMI) (WHO, 2021). Obesity is achieved when an adult's BMI is greater than or equal to 30kg and overweight has a BMI greater than or equal to 25kg.

Table1: Increased BMI by IPD Compliance

Compliance Questions			**BMI Differences**		
			.00	**1.00**	**2.00**
@305 Hot water therapy	Yes	Count	22	17	1
		Row N %	55.0%	42.5%	2.5%
	not sure	Count	3	1	0
		Row N %	75.0%	25.0%	0.0%
	No	Count	1	0	0
		Row N %	100.0%	0.0%	0.0%
@311 IPD compliance	Yes	Count	22	16	1
		Row N %	56.4%	41.0%	2.6%
	not sure	Count	3	1	0
		Row N %	75.0%	25.0%	0.0%
	No	Count	1	1	0
		Row N %	50.0%	50.0%	0.0%
@313 Daily IPDs	Yes	Count	23	16	1
		Row N %	57.5%	40.0%	2.5%
	not sure	Count	2	1	0
		Row N %	66.7%	33.3%	0.0%
	No	Count	1	1	0
		Row N %	50.0%	50.0%	0.0%
@315 High carbs	Yes	Count	23	16	1
		Row N %	57.5%	40.0%	2.5%
	not sure	Count	3	2	0
		Row N %	60.0%	40.0%	0.0%
	No	Count	0	0	0
		Row N %	0.0%	0.0%	0.0%
@317	Yes	Count	23	16	1
		Row N %	57.5%	40.0%	2.5%

Used indigenous spices	not sure	Count	2	2	0
		Row N %	50.0%	50.0%	0.0%
	No	Count	1	0	0
		Row N %	100.0%	0.0%	0.0%
@337 IDPs by choice	Yes	Count	8	9	1
		Row N %	44.4%	50.0%	5.6%
	not sure	Count	13	6	0
		Row N %	68.4%	31.6%	0.0%
	No	Count	5	3	0
		Row N %	62.5%	37.5%	0.0%

Source: Fieldwork (2023)

Cultural Sustainability

Table 2 outlines the participants' food choices and how their responses to them show congruence or lack thereof with their community's beliefs, norms, and cultural expectations. Supporting responses (open-ended) also elaborated on the reasons for their answers. Compliance with the cultural expectation is rated using a High, Moderate, and Low scale. From the data in

Table 2: IPD, Cultural Expectations and Responses (Note that more women acknowledged IPD as a norm and the appropriate way of having a fulfilling *omugwo* experience).

Question #	Theme	Mean Response	Std. Deviation	Rated
301	I had extra help during *omugwo*	1.11	.438	High
303	I engaged in house chores during *omugwo*	2.27	.751	Low
305	I was strict on hot water therapy during *omugwo*	1.13	.405	High
307	I consumed cold drinks during *omugwo*	2.67	.603	Low
309	I consumed ice cubes during *omugwo*	2.19	.358	Low
311	I was on IPD during *omugwo*	1.18	.490	High
313	I was on my IPD daily during *omugwo*	1.16	.475	High
315	I had more of yam in my IPD during *omugwo*	1.11	.318	High
317	I ate food with lots of local spices	1.13	.405	High
319	I craved other food (non-IPDs) during *omugwo*	1.44	.624	Moderate
321	I consumed varieties of food during *omugwo*	2.56	.725	Low
323	I consumed food containing local veggies during *omugwo*	2.60	.688	Low

325	I consumed fruits and salads during *omugwo*	2.69	.596	Low
327	I had allergies to fruits/salad during *omugwo*	2.31	.468	Low
329	I had allergies to local spices during *omugwo*	2.64	.645	Low
331	I checked my health compliance with IPD during *omugwo*	2.84	.520	Low
333	I expected weight increase/gain before *omugwo*	1.20	.588	High
335	My body size during/after *omugwo* is symbolic of my husband's wealth	1.31	.668	Moder ate
337	I do like my indigenous postpartum diet	1.78	.735	Moder ate
339	I used the food App and dietician directives during *omugwo*	2.71	.626	Low

High= Most respondents complied with the Igbo communities' overall cultural expectations, norms, and traditions for IPD. **Moderate=** variables where they had different responses. **Low =** few respondents adhere to the Igbos' cultural expectations, norms, and traditions.

There was high compliance to cultural expectations among participants; *omugwo* was a period to fulfil all norms and values associated with postpartum care for both mom and child. Although, the Socio-Economic Status (SES) of the participant was also considered an influence on compliance with cultural norms as expected from the new moms. Hence, the interplay between SES and food choices during *omugwo* is evident in the study. The exposure that comes with education and a higher income level influences accessibility and attitude towards food. It is observed that the higher the income and level of education, the more they engage in new practices. The responses for the use of dietician's directives came from higher SES participants. The same participants consumed cold drinks and ice cubes; thus, the tendency of high SES to explore other food choices and dietary patterns is high. However, consistency with IPD is spread through other social classes; women of lower social status observably consumed more of the food required by society.

Discussion

This study showed that the participants maintained different patterns of food choices during their postpartum period to preserve their cultural norms. There were obvious disparities in what makes an IPD from the three study areas; however, the felt impacts are seemingly the same. The IPDs became a form of identity and connection to the participants' indigenous cultural norms and values. Lactation is a great concern to WHO; hence, new moms are expected to consume a good amount of all nutrients, with protein,

fruits, and veggies as the main source of the overall nutrients (IOM, 1991).

This shows the implications of fruits and vegetables during this period for healthy living and healthy weight. Avoiding fruits and veggies could lead to some health crises like postpartum anaemia and continuous intake of particular food nutrients based on belief may hinder healthy living and healthy weight. High carbs and fatty diets are dangerous for women susceptible to increased BMI and postpartum anaemia. There are no specifications for water temperature for new moms; hence cold drinks are yet to be verified if harmful for the moms. This suggests varieties in postpartum processes; hence, some scholars also support that communities conduct postpartum care differently. Ejikeme and Ukaegbu (2013) outlined the process and impacts of using medicinal leaves in Edem-Ani during postpartum care; thus, this may not be the case elsewhere.

Based on the result, some participants gained weight because they intentionally anticipated weight gain and worked towards that purpose. This supports Faria-Schutzer and colleagues' (2018) remark that some women may not regain their BMI after childbirth. Weight gain for some scholars is an essential but critical part of the postpartum period due to the need to be healthy and produce breastmilk for the baby (Lawal, et al., 2022). The soups and native tea made with local spices and *ajumbaise is* believed to have slimming effects and could impact weight loss. However, consistent consumption of slimming tea could also harm the quality of micro-nutrients the mom absorbs and breast milk production for the baby (McCallium, 2022). Therefore, awareness of obesity is important as some women anticipate weight gain during *omugwo*. Based on body absorbance and health, IPDs can be very beneficial; however, subjecting the new mom's body to a food pattern for a long period could be harmful, as beliefs towards food are not necessarily accurate. The food here is not just a means to survival but also a means of identification and commonality.

The paper hypothesised postpartum obesity as the implication of IPD in Igboland; however, the result shows that most participants (only 57.8%) became overweight based on the WHO BMI model. A good number of the 57.8% anticipated an increased BMI as evidence of love from a proper postpartum period. Only 2.2% of the participants were obese. Regardless, the figure for obese participants could be negligible in making assumptions or conclusions that IPDs are responsible for obesity. While the implication of IPDs for increased BMI is a concern, genetics, diets, low physical activities and socio-economic factors were listed by Albuquerque, et al. (2017) as factors that could influence obesity. Therefore, future research may need to evaluate and compare other variables to draw that conclusion.

Building on the views of Bourdieu's embodiment, food patterns are contextualised to suit every given society's worldview and social ecology (Bourdieu, 1984). Cultural expectations and social norms are then deduced from what the society thinks is "local" and accessible from the environment. Innovations and adoptions may be frowned upon as it disrupts the

consciousness and expression of societal identity. This approach ensures the preservation of the indigenous and symbolic value of cooking and ways of eating a particular meal, as rightly supported by Obieluem, Ugwuanyi and Agbo (2023) that cuisines are remarkable attributes of cultural expression among the people of Nsukka Urban.

Igbo tribe celebrates food and *omugwo* is certainly a way to show that. This study does not intend to disapprove of Igbo foods; rather, it is geared towards demonstrating that there are some neglected implications surrounding the beliefs in food patterns. This is usually the case when the food influence on people is not appropriately investigated. Regardless, the results of the research point to the direction of cultural beliefs on food and the preservation of that beliefs. In conclusion, the study reinstates that social norms and expectations help to strengthen cultural consciousness and identity preservation. As cultural expectation influences the food patterns among new moms, cultural norms and values are preserved in those choices.

Conclusion

The study reveals that new moms from the selected Igbo communities had different dietary choices throughout their postpartum period. Most supported cultural expectations for postpartum care, while others made food choices from local sources. Consumption of hot and spiced food was more prevalent as such are culturally believed to have healing impacts on the new mothers. Few tried different food choices like consumption of ice cubes and vegetables which were categorised as harmful by tradition; however, no known side effect was registered by the "offenders". It is noted from the survey that most new moms on indigenous diets increased BMI as most even anticipated it, believing it is a factor in explaining their well-being and their husband's wealth. There was high positivity toward support for cultural expectations, as most participants see the cultural norms and values surrounding postpartum care as the appropriate choice rather than trying new options. The few who tried new diets were somehow influenced by their socioeconomic status and eagerness to innovate. To conclude, it is evident from the survey that there is a strong tie between human behaviour, cultural norms, values, and identity.

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